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ABSTRACT

The importance of theory in guiding research and development efforts in education is discussed. Issues related to academic foundations, professional education, and teaching fields that need to be addressed when developing a theory of teacher education include: (1) what effect different amounts, sequences, and combinations of content will have on the achievement of specified purposes of education; (2) what effect different delivery methods or experiences (e.g., lecture, laboratory, seminar, field experiences, simulations) and different student processing modes (e.g., reading, writing term papers, memorizing, observing, practicing, discussing ideas in small groups) will have on the achievement of the purposes of teacher education; and (3) what effect allocating different content, delivery methods, and student response modes to different stages in the career development of the teacher will have on the achievement of purposes of teacher education. (JD)

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NOTES ON A THEORY OF TEACHER EDUCATION

Robert E. Shutes

It has long been accepted in the philosophy of science that theory plays a critically important role in the generation of knowledge. It orders and makes sense of previous knowledge and research. It organizes and channels future research and allows the impact of research to cumulate. It enables prediction to become increasingly accurate and the statement of what is known to become ever more precise. Lacking theory, investigation is incoherent, proceeding by trial and error and testing unrelated hypotheses one after another. Since findings are discrete, knowledge cannot cumulate and a field of inquiry cannot advance.

Research on teacher education has so far been conducted without benefit of formal theory (Shutes, 1975). Indeed, such informal theory as has been applied to research in this area has mostly been limited to a particular area of interest such as micro-teaching or the function of early field experiences. Considering the complexity of teacher education and the widely held point of view that teaching is an art not subject to scientific analysis and explanation, some will certainly question whether teacher education should be researched at all and will assert that a philosophical position about the proper preparation of teachers will continue to be more useful than a theory. This paper springs from the opposite point of view. It rests on the belief that whatever part of teaching is an art, a major part is or can become a science that is subject to continuing refinement through empirical study and that is teachable in turn to new teachers. It also assumes that the preparation of teachers is too important to be governed by personal bias, by changing fashions, or by chance in the absence of a carefully developed rationale.

In keeping with that point of view, this paper examines some problems discernible in contemporary thought and research on teacher education and suggests a connection between those problems and the lack of theory. It then suggests the kinds of issues with which a theory of teacher education should be concerned. It is hoped that from this beginning the skeleton of a theory can be built and elaborated.

TEACHER EDUCATION DEFINED

Teacher education is a commonly used but vaguely defined term. For example, Peck and Tucker (1973, p. 942) noted in the *Second Handbook of Research on Teaching* that " 'Teacher education' is a long, complicated series of operations. Each operation is, itself, an extremely complex set of steps, most of which have never been carefully identified, let alone measured." Lanier (1982, p. 13) listed three conceptions of the effective teacher that have influenced research and the design of teacher education programs: the teacher as effective person, the teacher as skilled performer, and the teacher as professional decision maker. The three conceptions could be thought of as defining three major functions of teacher education. Smith (1982, p. 54) reported

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that the University of Florida's PROTEACH Program conceived of three similar teacher roles: teacher as teacher, teacher as person, and teacher as professional.

From a different perspective, teacher education has been defined by contrasting it to teacher training. Teacher training, it is argued, prepares specialists in the practical details of the occupation, people who follow procedures and instructions specified by others without exercising much judgment about them. Teacher education, on the other hand, is said to prepare professionals to exercise independent judgment and make decisions appropriate to particular situations they encounter. Lanier (1982, pp. 21-23) has a very good discussion of the contrast.

Those who would define teacher education as a preparation program that emphasizes technical skills (planning, lesson design, classroom organization, and so on) would probably be satisfied with the goals associated with teacher training and would confine the study of teacher education to the pedagogical studies within the baccalaureate degree. They would likely argue that it would be impossible to reach higher goals within the limits of preservice teacher preparation. Those who would define teacher education as a program to prepare teachers for professional decision making as well as to exercise technical skills would probably see teacher education as embracing considerably more than pedagogical studies. Indeed, they would likely argue that teacher education cannot be completed within the baccalaureate or preservice program.

The fact is, of course, that we can prepare teachers in any way we want, to fill whatever roles we choose, at any level of competence we set. A good definition, then, should be sufficiently general to embrace all the possibilities and still set essential parameters. Such a definition would look something like the following.

Teacher education is a program of studies and experiences designed to prepare teachers:

a) to meet all the legal requirements for initial licensing, for later license renewal, and for higher level licenses required or sought;

b) to enable their pupils to achieve the kind of learning the society expects at or beyond the amount it requires;

c) to engender expected learning within a specified time frame at or beyond a specified level of success (e.g , a minimum level of mastery expected of all students and/or a minimum proportion of students reaching the expected mastery level);

d) to accommodate a specified range of individual differences among students while attaining the specified level of success;

e) to accomplish the learning goals without exceeding the societally set range of motivating and coercive behaviors;

f) to relate to students in the societally desired way so as to develop expected attitudes and values;

g) to maintain sufficient job satisfaction through experiencing personal and professional growth and success to continue an extended teaching career.

ISSUES A THEORY OF TEACHER EDUCATION SHOULD ADDRESS

There are three broad issues a theory of teacher education should address:

1) what effect different amounts, sequences, and combinations of content will have on the achievement of the purposes of teacher education specified in the definition.

2) what effect different delivery methods or experiences (e.g., lecture, laboratory, seminar, field experiences, simulations) and different student processing modes (e.g., reading, writing term papers, memorizing, observing, practicing, discussing ideas in small groups) will have on the achievement of the purposes of teacher education specified in the definition, and

3) what effect allocating different content, delivery methods, and student response modes to different stages in the career development of the teacher will have on the achievement of the purposes of teacher education specified in the definition.

One might have expected that a theory of teacher education would predict the optimum content, delivery, and response patterns to produce the best prepared teachers. That position is rejected in favor of the more general statements offered for two main reasons. First, the most effective content, delivery, and response patterns will clearly change for the same teacher at different points in his/her preparation and career, and they will also differ between teachers at the same level of experience. Second, since the same competencies can be developed by more than one curriculum and more than one methodology, there will never be one optimum way to prepare teachers at any stage in their careers. Rather there will be several ways to achieve the purposes of teacher education, each with different concomitant effects. It must be the objective of theory to predict the consequences of delivering different amounts, sequences, and combinations of content through different means and requiring different kinds of student responses at different stages in the teacher's career.

It is quite likely that when these several dimensions are considered together, some unfamiliar patterns of teacher education will be identified for experimental study. For example, research has repeatedly shown that teacher educators consider student teaching the capstone of the teacher education program and student teachers consider student teaching the most important part of their preparation (Davies & Amershek, 1969). On the other hand, research has also shown that cooperating teachers influence student teachers more than college supervisors do, especially in the teaching techniques that they adopt (Friebus, 1977; Karmos & Jacko, 1977). Still other research (Johnson, 1969) indicates that prospective teachers become more dogmatic as they get closer to student teaching. When these three findings are put together, they suggest that while the customary sequence of pedagogical content and the modes of delivery and response to it achieve some of the purposes of teacher education, they may subvert the achievement of others.

Perhaps if all or part of student teaching came early in the teacher education program and exposed students to the problems of teaching and to the customary

teaching and management techniques before they completed their professional foundation and special methods courses, they would better learn why certain teacher behaviors are more effective than others. Perhaps if the last influence on the behavior and beliefs of new teachers occurred in the reflective setting of the university rather than in the counterinfluential public school setting, more of the goals of teacher education programs would be achieved. Perhaps if clinic teaching were thought of as occurring at several points in a teacher's career, student teaching could be put in a quite different perspective. At any rate, considering the several dimensions of teacher education together in a theoretical framework allows new possibilities to be identified for both research and practice.

THE DIMENSIONS OF TEACHER EDUCATION

Teacher education programs have customarily been divided into a general or liberal studies component, a specialization component, and a pedagogical or professional component. The components have typically been thought of as occurring in that order, with liberal studies being accounted for in the academic foundations of the freshman and sophomore years, specialization dominating the junior year, and professional studies dominating the senior year (with some overlaps, of course). Generally, they have also been thought to be officially completed at the point of initial certification; any further study has been to some degree voluntary, has been mostly in the professional area, has only occasionally involved some further work in the old specialization or in developing another one, and has almost never systematically expanded the liberal studies.

Almost universally the purposes of each component have been only vaguely defined, and their definition has been tied to the specification of courses in the baccalaureate or other degree program. Indeed, it seems almost always to have been the case that each component's purposes have been thought to be achieved when the sequence of courses involved was completed, even though those purposes were never explicitly addressed or directly developed in any course. The effects of that assumption and possible alternative assumptions need to be carefully explored for all three components in a theory of teacher education.

The Liberal Studies Component

The content of the general or liberal education component has at times embraced all of the following: reading and writing skills, mathematics, biological and physical sciences, social sciences, humanities, and fine arts. The purpose of this component has at various times been said to be to develop broadly educated adults, to provide a breadth of knowledge on which depth of specialization can be built, and to provide the foundations to support professional study. Such purposes are open to multiple interpretations, so it would have been hard to determine whether they had been achieved even if anyone had tried. As recently as 1977, the Carnegie Foundation for the Advancement of Teaching declared the academic foundations to be a disaster area in most college programs. Their conclusion suggests that at present in most colleges and universities the academic foundations are not serving any purposes very well.[28]

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Concern with the liberal education component does surface periodically in critical analyses of teacher education. For example, the Bicentennial Commission on Education for the Profession of Teaching of the American Association of Colleges of Teacher Education AACTE (Howsam, Corrigan, Denemark & Nash, 1976) listed general or liberal studies as a major component in the education of teachers. The Commission stated that "Liberal education for teachers should not be different from the liberal education of other students unless the differences represent extended opportunities for prospective teachers to explore the interrelationships of knowledge and their implications for teaching and learning" (p. 82). Although the Commission noted that "too often general studies are narrow, sketchy introductions to disconnected subjects with an overemphasis on nomenclature and classification systems," they did not recommend specific characteristics for liberal studies, and they only implied the purposes of those studies as they described a unique addition to the teacher education curriculum. This was incorporated in their recommendation that all prospective teachers participate in "an experience focusing on the nature and implications of knowledge" in conjunction with their general studies. They also recommended that this "*experience*" be taught by an interdisciplinary team and that students "consider alternative ways of knowing, unique structures of knowledge in different fields, linkages among concepts in the various disciplines, and the implications of these ideas for teaching at elementary and secondary levels" (p. 82).

Somehow the general studies are expected to provide the raw material from which the interdisciplinary *experience* will identify different ways of knowing, knowledge structures, and relationships between concepts. Although the appropriate general studies are not suggested, the proposed interdisciplinary *experience* is a concrete proposal to see that at least part of their purpose is accomplished. The Commission also named study in the undergirding disciplines of psychology, sociology, anthropology, and philosophy as a major component of the education of teachers that should be prerequisite to professional studies. Since these disciplines are not part of the specialization or professional component, they can be thought of as one specified part of the general studies component.

Another example of periodic concern for the liberal education component is the May-June 1980 issue of the *Journal of Teacher Education*, in which *the liberal education of educators* is the theme. In that issue six scholars (Carbone, 1980; Ducharme, 1980; Freeman, 1980; Herson, 1980; Raths, 1980; Rich, 1980) discussed the difficulty of defining liberal education, the generally sorry state of liberal studies at present, and the near impossibility of specifying which subjects or courses are essential to develop liberally educated people. They were unanimous in their conviction that a liberal education is important for all educated people and particularly for teachers, and they were generally agreed (at least implicitly) that a liberal education is developed during the undergraduate program, especially during its first two years. Rather than specifying specific courses, most of them addressed the purposes the liberal studies should serve, and some gave examples of disciplines that would contribute to those purposes. Table 1 displays the purposes proposed by four of these scholars; although the language differs from one to the next, several similarities in intent are easily perceived.

There are three important inferences one can draw from these discussions of the

liberal studies component. First, although the language still lacks precision, there appears to be an emerging consensus about the purposes that these studies should serve. Second, there is general agreement that, as presently implemented, the academic foundation requirements do not do very well in achieving those purposes. Third, in terms of teacher education, there is an unnecessary assumption that these purposes can and should be mostly achieved by the end of the sophomore year and completely achieved by the end of the senior year.

The first inference suggests that with attention and effort it ought to be possible for any institution of higher learning to specify the purposes of the liberal education component with sufficient precision to design a curriculum to achieve them. Such an effort would obviously require widespread involvement and cooperation among representatives of many disciplines to assure that all courses in all disciplines that are to be part of the liberal studies component serve the purposes defined for that component. At present, for example, most courses in the academic foundations focus on the transfer of information, but the purposes of the liberal studies suggested in Table 1 focus more on developing processes and intellectual skills. The second inference implies that the curriculum should be built to accomplish its predetermined purposes instead of to accommodate existing courses, departments, and disciplinary orientations toward serving the development of specialists. It suggests that the delivery system must be drastically changed and improved in order to achieve its purpose. The third inference suggests that the liberal studies component of teacher education could be continued just as legitimately and importantly as the specialization and professional components throughout a teacher's career.

A theory of teacher education should allow one to hypothesize about a number of issues related to the liberal studies component. Some examples would include:

- what purposes the liberal studies can most effectively serve;
- which disciplines could contribute most directly to achieving the purposes of the liberal studies;
- which kinds of content (e.g., concepts, generalizations, examples, processes, modes of thought) within disciplines would best facilitate the desired learnings;
- which combinations and sequences of content, within and between disciplines, would best facilitate the desired learnings;
- whether it makes a difference in level and quality of student learnings if the instructors in all the liberal studies courses are made aware of the purposes the set of courses is to serve;
- whether it makes a difference in the level and quality of student learning if the instructors in all the liberal studies courses participate in planning and monitoring the liberal studies program;
- what kinds of effects different forms of content, different experiences, and different response modes have on the achievement of program goals;
- which purposes of the liberal studies fit best at different career development levels.

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Table 1

PROPOSED PURPOSES OR GOALS FOR LIBERAL EDUCATION*

John Martin Rich University of Texas at Austin	Laurence J. R. Herson The Ohio State University	James Raths University of Illinois, Urbana-Champaign	Peter F. Carbone, Jr. Duke University
Concern for key questions rather than for fixed content is characteristic of liberally educated individuals.			
One or more generic modes of inquiry should be selected for application to the problems under consideration:	The curriculum stresses four capacities all dealing with connections:	As a result of general education students should:	The focus ought to be on:
a) The analytical mode (e.g., math, logic, metaphysics, epistemology, theory construction); b) The empirical mode (e.g., studies in the natural and social sciences); c) The valuational mode (e.g., aesthetics, ethics, some religious studies, and aspects of economics).	a) an ability to connect argument and evidence with conclusions (the traditional meaning of logic); b) a capacity for understanding relational, affective, or deterministic processes (an appreciation of theory building); c) an ability to judge which arguments and which data are most fully supportive of the conclusion; d) an ability to connect and compare some designated work (poem, opera, laboratory finding, architect's drawing, public opinion poll . . .) with an accepted judgmental canon (in short, the skills of the critic).	a) be aware of and concerned about the ways in which information is generated and tested; b) be sensitive to the distinction between findings and the explanations for findings; c) recognize that while many explanations may be advanced to account for certain phenomena, some may be better than others.	a) the structure of knowledge, b) principles of explanation, c) nature of verification, and d) methodological strategies and techniques in a given field rather than on subject matter, though some familiarity with the latter is obviously a prerequisite for this approach.

*Taken from articles by the four scholars in the May-June, 1980 (31:3) issue of the *Journal of Teacher Education*. Sequence and format have been altered to allow similar ideas to be shown in somewhat parallel positions.

Area of Specialization Component

As in the liberal studies component, the purposes of the specialization area have also been left in rather vague terms. Language such as "to build depth in the subject," "to engender command of the field," or "to assure that the teacher knows more about the field than is required in the public schools" does not tell us how we shall recognize "depth" or "command" or "more than is required." More often than not, the intent gets translated into some required numbers of credit hours, with the minimum acceptable number varying from field to field, from institution to institution, and from state to state. Certain courses are specified within the required hours, but several elective options are usually provided. Therefore, even within the same institution, students with the same specialization may not have the same courses or pursue the same goals.

Customarily, the only qualitative criterion applied to the hours required for the specialization is a grade point ratio set somewhere between 2.00 and 3.00 on a four point scale. Rarely has anyone asked what the prospective teacher should learn in those hours—what knowledge of the structure of the field, what key concepts and generalizations, what skills and processes, what abilities to explain, to illustrate, to translate into simpler or more sophisticated terms. Until recently, it has been rare for anyone to ask for measures of learning in the specialization in any form other than course grades. Although the specialization area is being included in some of the developing programs of teacher competency testing (Sandefur, 1984), there is no evidence that such tests go beyond factual information or reflect a well rationalized point of view about all the things a competent teacher should know about his subject to teach it well. Thus, even though students take identical courses, if they take them in different semesters or with different instructors, their learning within their specialization may differ substantially; if they take different courses, it will be substantially different. Unless the competency tests are based on a much clearer and more widely adopted theoretical position on what competencies the specialization area should produce, such tests will inevitably become measures of minimum familiarity with minimum quantities of low-level facts.

Several possible purposes for the specialization component can be considered. A basic purpose could be to give the prospective teacher command of all the content in that subject he or she might ever be called upon to teach in the public schools. A broader purpose would be to acquaint the prospective teacher also with the college level content in that subject for which the public school level content would be prerequisite (to give the teacher, in other words, a perspective of the sequence of the field and an understanding of where the content he or she will teach fits in that sequence). A quite different purpose would be to build in the prospective teacher an understanding of all the dimensions of the specialization regardless of where they would be encountered from kindergarten through graduate school. It could also be a purpose of the specialization to provide the prospective teacher with a knowledge of the history of the field and its development or with an understanding of all of the uses of its content.

A quite different way of thinking of the purposes of the specialization component considers its function in the general development of a teacher. For instance, one could propose that the purpose of the specialization is to give the teacher awareness of the

nature and functions of expertise and/or of how it is built and of what satisfactions it affords its possessor. This would apply to elementary teachers who are responsible for many subjects (possibly not including their specializations) as well as to secondary teachers who do in fact teach their specializations. Developing an understanding of what special insights expertise provides allows one to put other areas of less developed knowledge in a more humble perspective. It also can encourage higher aspirations for personal accomplishment, greater respect for knowledge, and more insistent reference to facts in responding to opinion or claim. These could also be adopted as purposes for the specialization in their own right, and their effect on the thought, the belief, and the behavior of the prospective teacher can be hypothesized and investigated. It should be noted that the purposes discussed in this paragraph are not incompatible with the more pragmatic purposes listed first.

Not only are there different possible purposes for the specialization component, there are also different ways of expressing those purposes. For example, in the sample purpose statements given in the preceding paragraph, there was reference to public school level content and to college level content. The term content could be replaced by facts, concepts, generalizations, processes, and modes of inquiry and so made more precise. The term public school content could be replaced by more exact descriptors, such as arithmetic, algebra through equations with 3 variables, plane geometry, and trigonometry and similar substitutions could be made for college level content. A theory of teacher education should be concerned with the effects of using different kinds of language to express the purposes of the components of teacher education on the achievement of those purposes.

There is a further question of whether the individual instructors in the courses taken for the specialization component are aware of the purposes adopted for the specialization and consciously and explicitly seek to advance those purposes in their instruction. They may be totally ignorant of the fact that the designers of the specialization component (even if they included representatives from the specialization) adopted the purposes in the first place. They may or may not agree with the purposes; they may even consider the purposes irrelevant in the context of their discipline. They may also accept the purposes but not attempt or not know how to make their instruction serve them. Given the realities of operation on most college and university campuses, it is likely that few of the instructors who teach specialization courses even suspect that the specialization is intended to accomplish some overall goals, especially goals related to teacher education. Consequently, if those goals are served at all, it is mostly by chance. A theory of teacher education should predict the consequences of different levels of instructor awareness, acceptance, and pursuit of general purposes for the specialization.

Beyond the purposes for the specialization, there are questions about its optimum scope, sequence, and configuration for theory to address. There has been debate for years over how many semester credit hours should be required in the specialization, though requirements have rarely been made beyond those for the initial certificate. Furthermore, despite considerable variation in the number of hours required in the specialization, significant positive correlations between the number of hours taken and a wide variety of measures of teacher effectiveness have rarely been found. Neither has any consistent relationship been established between grade point average in the

specialization and teacher effectiveness. Though common sense would suggest that teachers who know more about their subject should be able to teach more of it to their students (i.e., they should be more effective), the fact that these gross measures of their knowledge do not correlate significantly with any measures of their students' achievement indicates that we have been asking the wrong questions about the relationship.

Since the amount of the teacher's knowledge in his or her specialization that can be taught in any one year to public school students is relatively small, perhaps the extent of the teacher's knowledge is not the critical factor. Maybe instead it is more important for the teacher to have personally organized that knowledge—for example, into categories of more and less important; into related clusters or hierarchies; into sets of facts, concepts, and generalizations; into sets of principles and supporting examples; into categories of more interesting and less interesting, or more useful and less useful, or still some other organization. Maybe it is more important whether the teacher can construct a semester's course or a year's course in his or her specialization at the appropriate level of difficulty and with the appropriate amount of variety to fit the developmental level of the students and do it without reference to an existing textbook than it is how many semester hours the teacher has completed in the field or what grades were earned. A theory of teacher education should explore such alternatives.

No research studies and no conceptual statements have been found which are concerned with how work in the specialization should be sequenced for optimal effect. Some courses in every field are declared to be prerequisite to others, but they are relatively few at most institutions and the prerequisites are often waived by the instructor. It would be useful to know whether a carefully designed *sequence* of experiences would prepare teachers with a better sense of structure in their discipline, with better skills, and with more effective teaching strategies than teachers who took a more or less random sequence of courses. Similarly, it would be useful to know whether certain configurations of courses in the specialization—introductory courses, survey courses, laboratory and application courses, critical assessment courses, special topic courses, and so on—would produce more effective teachers than alternative configurations. This leads, in turn, to a consideration of the effect that different kinds of learning experiences within courses and configurations of courses may have on the later performance of the teacher. These are also questions that a theory of teacher education could pose and explore, and that exploration should consider the effect of completing part of the specialization component after initial certification.

Professional Studies Component

The professional or pedagogical studies have long been considered essential to the preparation of teachers (see, for example, Ryan, 1975). Indeed, Corrigan (1982, p. 38) asserted that "... nothing should obscure the fact that the difference between an educated person and a professional teacher is pedagogy—the science of teaching." Although among professionals there is a strong consensus on this point, there has been anything but consensus about what content and experiences the pedagogical studies should contain. In implicit recognition of this disagreement, Corrigan (1982, p. 38) argued that a profession "... must possess a clearly defined common body of knowledge, values, and a repertoire of skills essential to professional practice ..." and

then asked "How can we get the teaching profession and its training arm to identify, accept and teach a common body of knowledge, skill and professional values essential to the practice of teaching?"

Howsam et al. (1976, pp. 86-91) proposed seven categories of objectives for the education of teachers: 1) theoretical and empirical knowledge (including the foundations), 2) humanistic educational attitudes and values, 3) a repertoire of teaching behaviors and skills, 4) systematic induction into the profession, 5) the personalization of teaching style, 6) awareness of professional issures and concerns, and 7) continuing inquiry and development. It is significant that they did not think of teacher education as concluding with initial certification. Smith (1982) described the professional component of the University of Florida's PROTEACH programs as including 1) a foundational education segment including educational psychology, tests and measurements, and history and philosophy of education; 2) a generic pedagogical segment which deals with general knowledge and skills appropriate for all teachers; 3) a subject-specific pedagogical component which deals with specific knowledge and skills appropriate to teaching a particular age level or subject, and 4) a clinical and laboratory segment. Both of these delineations of the professional component are very similar to delineations proposed or implemented in the past, although they both challenge to some degree the way these dimensions have been treated previously.

The thrust of the discussion in the Bicentennial Commission report (Howsam et al., 1976) indicates somewhat more concern with the purpose of each aspect of the professional component than has been true in the past, but the purposes expressed are still typically general and occasionally vague or obscure. In order for the effect of these aspects of the professional component individually and of the component as a whole to be properly evaluated, their purposes need to be clarified and amplified.

Both the Bicentennial Commission Report (Howsam et al., 1976) and the Florida PROTEACH Program (Smith, 1982) gave some attention to the content to be delivered in the professional component and to the method of that delivery, though neither was exhaustive on these matters. Moreover, both assumed the validity of their recommendations rather than taking an experimental attitude and planning to compare the results of using different content, methods, and student responses. The Bicentennial Commission (Howsam et al., 1976, p. 86) named six categories into which instructional modes could be grouped: 1) classroom, 2) learning resource center, 3) laboratory, 4) field, 5) model, and 6) mentor, but other than declaring that teaching methodology should be exemplary in teacher education programs, the Commission did not specify what methods would produce best results for each part of the professional component. They said nothing about the kinds of student response modes that might make instruction more effective. Predicting what effect different kinds of instructional modes and student response modes would have on the achievement of the various purposes of the professional studies component is something a theory of teacher education should be concerned with.

These two contemporary delineations of the professional studies component are representative of many concerns from the past. Indeed, patterns in the professional studies component have tended to evolve in two ways. First, some content has remained rather stable while the delivery methods for it have frequently changed. Generic teaching methods would be a good example of stable content, and pro-

grammed instruction, televised instruction, peer teaching, microteaching, demonstration teaching, and various other methodologies would illustrate changes in the delivery system. Second, some content has changed repeatedly (sometimes even disappearing and reappearing) while the methodology has remained rather stable. The educational foundations, for example, have waxed and waned, having been abandoned from time to time because they were perceived as too theoretical and irrelevant by undergraduates, and having been resurrected at other times because teachers without knowledge of them lacked perspective, a sense of history, compassion for students, and other marks of professional teachers. Each time they have returned to the curriculum, however, it has been largely in the same form as before (namely in self-contained, disconnected, discipline-focused courses) and that has led to the same problems.

It is noteworthy that Howsam et al. (1976, pp. 87-88) expressed considerable dissatisfaction with the way the educational foundations have been taught in the past and recommended significant changes in the formats, conceptual frameworks, and delivery modes of the undergirding disciplines. It is rather surprising, however, that they did not explore the possibility of incorporating those foundations in the inservice as well as the preservice preparation of teachers. It is also disappointing that they got no more specific about how they should be taught than to ask their instructors to be "experimental in teaching procedures and delivery modes" (p. 88).

Lacking a theoretical framework to design, to evaluate, and to research alternative content, methodology, and student response modes in the professional studies component, teacher educators have been more driven by fads and frustrations than by rational or empirical sources. Many alternative definitions of scope, sequence, and the configuration of content could be investigated, especially if this component were thought of as beginning in the preservice education of teachers and extending through several stages in their careers. Similarly, a variety of methods of delivering the content and of involving the students in responding to it could be investigated to determine which ones best achieved the purposes identified for this component at different career stages.

SUMMARY AND IMPLICATIONS

The foregoing discussion has attempted to show that without a theoretical framework teacher education and research on teacher education have not developed a demonstrably superior and improving program or cumulated a meaningful body of empirical rather than experiential findings. Without trying to propose a theory of teacher education as such, it has suggested several matters in teacher education that a theory could address. It has even sketched the beginnings of a framework within which previous research could be organized and further research could be designed. As a means of suggesting next steps in the development of a theory of teacher education, a few implications of the preceding discussion are drawn below.

The first step in the development of a theory of teacher education appears to be to state a set of overall purposes for teacher education explicitly and completely. If in deriving the general set it appears that alternative sets are possible, the alternative sets should also be specified. Next, in the light of the general purposes, the presently

conceived components should be evaluated to determine whether they support the achievement of the general purposes better than alternative components or alternative ways of describing those components could. When a set of components has been selected as optimum, the purposes of each of them need to be fully specified. That, in turn, will allow the investigation of content within each component in terms of its contribution to the achievement of component purposes and general purposes.

The content of all components will need to be examined for its quantity, specific selection, sequence, combination or configuration within and across subjects, and its distribution across career stages as shown schematically in Figure 1. The amount of content should be stated in terms of major categories of concepts, generalizations, processes, skills, modes of thought, and the like rather than in terms of semester hours or proportion of a program. Within the major categories, alternative selections of the content itself can be specified and a set of hypotheses developed about the effect of using each set. Similarly, alternative sequences and combinations of content can be deduced and hypotheses can be generated about their effects. Finally, alternative distributions of the content across preservice and later career stages can be considered and hypotheses can be built about their effects. Figure 2 suggests some changing configurations of content across components at different career stages.

Several possible career stages are shown in Figure 2. Preservice and beginning teachers are to a considerable degree dependent on the supervision and guidance of others. Around the fourth or fifth year of service, when full certification is to be granted, it is expected that a professional teacher can function independently, and once

Figure 1

CONTENT DELINEATION

	Liberal Studies Component	Specialization Component	Professional Studies Component
Amount			
Specification			
Sequence			
Combination			
Distribution			

independence has been well established, it usually occurs that professional teachers become specialists in certain professional roles. For example, they supervise student teachers, they teach classes of handicapped or problem or gifted learners, they participate in experimental programs, or they become curriculum developers. The supervising/demonstration teacher is conceived of here as the one to supervise beginning teachers and to serve as a model in the use of certain teaching methods, classroom organizations, or instructional support systems. The master teacher assumes organizational and managerial responsibilities related to the design and delivery of the instructional program, serves as a guide and stimulus to the personal growth of junior teachers, and takes leadership in establishing the climate and ethos of the school. Other stages and roles could easily be conceived.

At each of these stages a different mix of liberal studies, academic specialization studies, and professional studies (or other identified components) is seen as appropriate

Figure 2

CHANGING CONFIGURATIONS OF CONTENT AT DIFFERENT CAREER STAGES

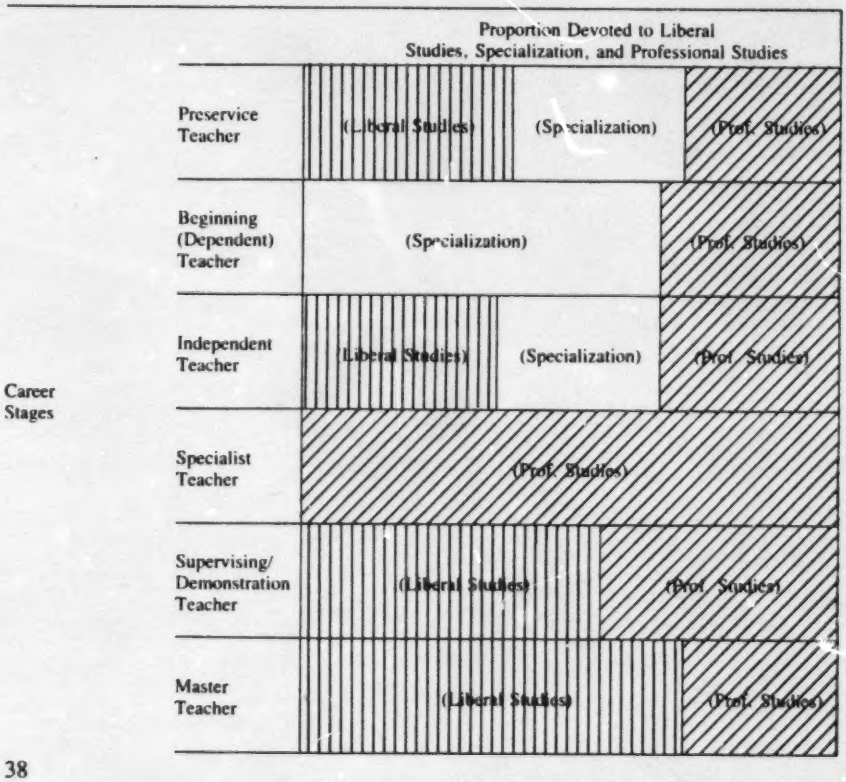

Table 2

SPECIFIC DIMENSIONS OF INSTRUCTION*

Locus of Delivery	Mode of Instruction	Instructional Behavior	Elicited Student Response	Form of Student Response
College Classroom	Lecture	Informing	Listening	Oral answer
College Lrng. Resc. Center	Discussion	Defining	Reading	Notes
College Laboratory	Dialogue	Explaining	Recording	Outline
College Library	Mediated presentation	Explicating	Responding	Reaction paper
College Office	Computer delivered presentation	Simplifying	Memorizing	Position paper
College Computer Center	Simulation	Evoking	Translating	Research paper
School Classroom	Reading assignment	Questioning	Applying	Test
School Lrng. Resc. Center		Probing	Analyzing	Oral presentation
School Laboratory	Demonstration	Evaluating	Synthesizing	Demonstration lesson
School Playground		Guiding	Evaluting	Trials
School Library		Modeling	Practicing	Role assumption
School Office		Advising	Performing	Microteaching
Sch. Tchr's Office or Conf. Room		Critiquing	Comparing	Leading a group
Community Meeting		Correcting	Relating	Teaching, Supervising
Board of Education Meeting		Confirming		

*Note: There is no attempt to relate visually the entries of the different columns by placing them at similar positions in the column.

to support the new roles being undertaken. It should be noted that the space devoted to each component represents the *proportion* of the total study devoted to it rather than absolute amounts of study, which will change from one stage to another. It should also be noted that none of the components is thought of as completed before mid-career, and research may well establish reasons to continue study in all components in varying proportions throughout a teaching career. Clearly, however, the nature of the appropriate content, of its delivery, and of teacher responses would need to change from one stage to another.

The final aspect of teacher education with which theory must be concerned is the instructional process. Five distinct dimensions of instruction that may influence outcomes have been identified or suggested at various points in this paper: 1) where the instruction takes place—its locus of delivery; 2) the mode of delivery; 3) the specific teacher behaviors and objectives; 4) the kinds of student responses elicited by the instruction; and 5) the form that the student responses take. Table 2 suggests the kinds of entries that might belong in each of those dimensions without trying to be exhaustive.

Obviously, there are more instructional possibilities than could be investigated in any one research study, and probably more than a theory would address. Once the purposes and content for teacher education have been laid out, however, it will be possible to match selected instructional dimensions to them for investigation and to hypothesize the effects of making different choices. That way the size of the research task can be reduced and the shape of the theory can begin to emerge. Along the way, some terms will have to be defined, some postulates will have to be framed, and some relationships will have to be predicted on the basis of past and cumulating research. A theory of teacher education will not spring full grown from anybody's head, but by identifying the theory's dimensions and parameters, we can quickly make conceptualizing and researching in teacher education more fruitful.

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